

CLAIMS

What is claimed is:

- 5 1. A method for disabling and enabling receiver circuitry in a cable modem connected to a headend in a cable modem network, the method comprising:

 transmitting a first message with first instructions from the headend to the cable modem to disable the cable modem receiver circuitry for periodic intervals separated by activation windows;

10 setting an indication of cable modem receiver circuitry state to disabled;

 transmitting a second message with second instructions from the headend to enable the cable modem receiver circuitry such that the cable modem receives the second message during an activation window, wherein any message received by a cable modem during a period outside the activation window is ignored; and

15 setting the indication of cable modem receiver circuitry state to enabled.
2. The method of claim 1, wherein the first message with first instructions from the headend to disable the cable modem receiver circuitry is a unicast SYNCH message.
3. The method of claim 2, wherein the unicast SYNCH message contains
20 periodic interval and activation window information.
4. The method of claim 1, wherein the second message with second instructions to enable the cable modem receiver circuitry is a unicast SYNCH message.
5. The method of claim 1, wherein the activation window is 100
25 milliseconds.
6. The method of claim 1, wherein each periodic interval is 10 seconds.

7. The method of claim 1, wherein messages the cable modem receives during the periodic interval are ignored.

8. The method of claim 1, wherein multicast messages the cable modem receives during the activation window are ignored.

9. The method of claim 1, wherein transmitter circuitry is disabled when receiver circuitry is disabled.

10. The method of claim 1, wherein no messages are transmitted from the cable modem to the headend during the periodic intervals.

11. A method for disabling and enabling cable modem receiver circuitry connected to a headend in a cable modem network, the method comprising:

receiving a first message with first instructions from the headend to disable the cable modem receiver circuitry for periodic intervals separated by activation windows;

disabling the cable modem receiver circuitry;

receiving a second message with second instructions to enable the cable modem receiver circuitry from the headend during an activation window, wherein any message received outside the activation window is ignored; and

enabling cable modem receiver circuitry.

12. The method of claim 11, wherein the first message with first instructions from the headend to disable the cable modem receiver circuitry is a unicast SYNCH message.

13. The method of claim 11, wherein cable modem receiver circuitry comprises an RF amplifier, a mixer, a phase lock loop, and an IF amplifier.

14. The method of claim 13, wherein the cable modem receiver circuitry further comprises a demodulator.

15. The method of claim 14, wherein the cable modem receiver circuitry further comprises one or more processors coupled with memory.

16. The method of claim 11, wherein the second message with second instructions to enable the cable modem receiver circuitry is a unicast SYNCH message.

17. The method of claim 11, wherein the activation window is 100 milliseconds.

18. The method of claim 17, wherein each periodic interval is 10 seconds.

19. The method of claim 11, wherein messages the cable modem receives during the periodic interval are ignored.

20. The method of claim 11, wherein multicast messages the cable modem receives during the activation window are ignored.

21. The method of claim 11, wherein transmitter circuitry is disabled when receiver circuitry is disabled.

22. The apparatus of claim 11, wherein no messages are transmitted from the cable modem to the headend during the periodic intervals.

23. A computer program product comprising a machine readable medium on which is provided program instructions for disabling and enabling cable modem receiver circuitry connected to a headend in a cable modem network, the computer program product comprising:

computer code for transmitting a first message with first instructions from the headend to the cable modem to disable the cable modem receiver circuitry for periodic intervals separated by activation windows;

computer code for setting an indication of cable modem receiver circuitry state to disabled;

computer code for transmitting a second message with second instructions to enable the cable modem receiver circuitry from the headend so that the cable modem receives the message during an activation window, wherein any message received by a cable modem outside the activation window is ignored; and

5 computer code for setting the indication of cable modem receiver circuitry state to enabled.

24. The computer program product of claim 23, wherein the first message with first instructions from the headend to disable the cable modem receiver circuitry is a unicast SYNCH message.

10 25. The computer program product of claim 23, wherein the second message with second instructions to enable the cable modem receiver circuitry is a unicast SYNCH message.

26. The computer program product of claim 23, wherein the activation window is 100 milliseconds.

15 27. The computer program product of claim 23, wherein each periodic interval is 10 seconds.

28. A headend connected to cable modems in a cable modem network, the cable modems comprising receiver circuitry that can be disabled and enabled, the headend comprising:

20 transmitter circuitry for transmitting a first message with first instructions from the headend to the cable modem to disable the cable modem receiver circuitry for periodic intervals separated by activation windows and for transmitting a second message with second instructions from the headend to enable the cable modem receiver circuitry such that the cable modem receives the second message during an

activation window, wherein any message received by a cable modem during a period outside the activation window is ignored; and

memory;

one or more processors coupled with the memory and the transmitter circuitry,

- 5 the one or more processor configured to set an indication of cable modem state to disabled to correspond with the receipt of the first message by the cable modem and to set the indication of cable modem state to enabled to correspond with receipt of the second message by the cable modem during the activation window.

10 29. The apparatus of claim 28, wherein the first message with first instructions from the headend to disable the cable modem receiver circuitry is a unicast SYNCH message.

30. The apparatus of claim 29, wherein the unicast SYNCH message contains periodic interval and activation window information.

15 31. The apparatus of claim 28, wherein the second message with second instructions to enable the cable modem receiver circuitry is a unicast SYNCH message.

32. The apparatus of claim 28, wherein the activation window is 100 milliseconds.

20 33. The apparatus of claim 28, wherein each periodic interval is 10 seconds.

34. The apparatus of claim 28, wherein messages the cable modem receives during the periodic interval are ignored.

35. The apparatus of claim 28, wherein multicast messages the cable modem receives during the activation window are ignored.

36. The apparatus of claim 28, wherein transmitter circuitry is disabled when receiver circuitry is disabled.

37. The apparatus of claim 28, wherein no messages are transmitted from the cable modem to the headend during the periodic intervals.

38. An apparatus with receiver circuitry connected to a cable network that can be disabled or enabled by a cable network headend, the apparatus comprising:

receiver circuitry configured to receive messages from the cable network when the receiver circuitry is enabled and during activation windows between periodic intervals when receiver circuitry is disabled;

transmitter circuitry for sending data onto the cable network;

memory; and

one or more processors coupled with the memory, the processors configured to disable the receiver circuitry when a first message received contains first instructions to disable and to enable the receiver circuitry when a second message received during an activation window contains second instructions to enable the receiver circuitry.

39. The apparatus of claim 38, wherein the first message containing instructions to disable the receiver circuitry is a SYNCH message.

40. The apparatus of claim 39, wherein the SYNCH message contains information on activation window and periodic interval lengths.

41. The apparatus of claim 38, wherein the second message containing instruction to enable the receiver circuitry is a SYNCH message.

42. The apparatus of claim 38, wherein receiver circuitry comprises an RF amplifier, a mixer, a phase lock loop, a filter, and an IF amplifier.

43. The apparatus of claim 42, wherein receiver circuitry further comprises a demodulator.

44. The apparatus of claim 43, wherein the receiver circuitry further comprises one or more processors coupled with memory.

45. An apparatus for disabling and enabling cable modem receiver circuitry connected to a headend in a cable modem network, the apparatus comprising:

means for transmitting a first message with first instructions from the headend to the cable modem to disable the cable modem receiver circuitry for periodic intervals separated by activation windows;

means for setting an indication of cable modem receiver circuitry state to disabled;

means for transmitting a second message with second instructions to enable the cable modem receiver circuitry from the headend so that the cable modem receives the second message during an activation window, wherein any message received by a cable modem outside the activation window is ignored; and

means for setting an indication of the cable modem receiver circuitry state to enabled.

46. The apparatus of claim 45, wherein the first message containing instructions from the headend to disable the cable modem receiver circuitry is a unicast SYNCH message.

47. The apparatus of claim 45, wherein the second message with second instructions to enable the cable modem receiver circuitry is a unicast SYNCH message.

48. The apparatus of claim 45, wherein the activation window is 100 milliseconds.

49. The apparatus of claim 45, wherein each periodic interval is 10 seconds.

50. The apparatus of claim 45, wherein messages the cable modem receives during the periodic interval are ignored.

51. The apparatus of claim 45, wherein multicast messages the cable modem receives during the activation window are ignored.

52. The apparatus of claim 45, wherein transmitter circuitry is disabled when receiver circuitry is disabled.

53. The apparatus of claim 45, wherein no messages are transmitted from the cable modem to the headend during the periodic intervals.

54. An apparatus for disabling and enabling cable modem receiver circuitry connected to a headend in a cable modem network, the apparatus comprising:

means for receiving a first message with first instructions from the headend to disable the cable modem receiver circuitry for periodic intervals separated by activation windows;

means for disabling the cable modem receiver circuitry;

means for receiving a second message with second instructions to enable the cable modem receiver circuitry from the headend between periodic intervals during an activation window, wherein any message received outside the activation window is ignored;

means for enabling cable modem receiver circuitry.

55. The apparatus of claim 54, wherein the first message with first instructions from the headend to disable the cable modem receiver circuitry is a unicast SYNCH message.

56. The apparatus of claim 54, wherein cable modem receiver circuitry comprises an RF amplifier, a mixer, a phase lock loop, and an IF amplifier.

57. The apparatus of claim 56, wherein the cable modem receiver circuitry further comprises a demodulator.

5 58. The apparatus of claim 57, wherein the cable modem receiver circuitry further comprises one or more processors coupled with memory.

59. The apparatus of claim 54, wherein the second message with second instructions to enable the cable modem receiver circuitry is a unicast SYNCH message.

10 60. The apparatus of claim 54, wherein messages the cable modem receives during the periodic interval are ignored.

61. The apparatus of claim 54, wherein multicast messages the cable modem receives during the activation window are ignored.

15 62. The apparatus of claim 54, wherein transmitter circuitry is disabled when receiver circuitry is disabled.

63. The apparatus of claim 54, wherein no messages are transmitted from the cable modem to the headend during the periodic intervals.